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EXAMINER	
BAREFORD, KATHERINE A	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,969	ZEHENTBAUER ET AL.	
	Examiner	Art Unit	
	Katherine A. Bareford	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment of July 10, 2009 has been received and entered. With the entry of the amendment, claims 1-21 are canceled, and new claim 22 is pending for examination.

Election/Restrictions

2. The Examiner notes the cancellation of non elected claims 11-16 in the amendment of July 10, 2009.

The requirement is still deemed proper and is therefore made FINAL.

Specification

3. The substitute specification filed on December 15, 2005 has been accepted.

Claim Objections

4. The objection to claim 19 because of informalities is withdrawn due to the cancellation of claim 19, in the amendment of July 10, 2009.

Claim Rejections - 35 USC § 112

5. The rejection of claims 17-21 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement are withdrawn due to the cancellation of claims 17-21 in the amendment of July 10, 2009.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In new claim 22, applicant has provided that the amount of nickel sulfate used is "substantially" 30 g/l, the amount of copper sulfate used is "substantially" 0.6 to 1.5 g/l, the amount of sodium hypophosphite used is "substantially" 15 g./l, the amount of sodium citrate used is "substantially" 50 g/l, the amount of ammonium chloride used is "substantially" 40 g/l, the pH of the bath is "substantially" 9.0 and the temperature of the bath is "substantially" 75 degrees C. However, the Examiner has reviewed the disclosure as filed, and the term "substantially" before each of these amounts, pH or temperature is new matter. The substitute specification (page 5, lines 10-20) and claims 19-21 (and original claims 11-12) do not widen the scope of the amounts, pH or

temperature by using the word "substantially", and therefore, there is no basis to widen the scope of the original teaching by use of the term "substantially", and the claim contains new matter. Note MPEP 2173.05(b) (D), noting that "substantially" is a "broad term".

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22, lines 6-7, "applying a conductive layer with a zincate coating after the chemical pretreating" is confusing as worded because (a) the use of the term "with" means it is not clear if the conductive layer is i) applied by the zincate coating process or ii) is another layer applied that is provided with a zincate coating over it or iii) is another layer that that is provided simultaneously with the zincate coating. For the purpose of examination, the Examiner has treated the claim as providing that the conductive layer is applied by the zincate coating process, but applicant should clarify the wording of the claim. (b) The phrase is also confusing, because as worded the claim does not clarify on what the conductive layer is applied, since as worded, for example, the conductive layer could be applied on i) an un-pretreated part of the metal casing

before or after the chemical pre-treatment or ii) on the pretreated part of the metal casing. For the purpose of examination, the Examiner has treated the conductive layer as being applied on the chemically pretreated outer surface of the metal casing, but applicant should clarify the wording of the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. The rejection of claims 17 and 21 under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al (US 6178306) in view of Gulla et al (US 4482596) is withdrawn due to the amendment of July 10, 2009 cancelling these claims.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al (US 6178306) in view of Gulla et al (US 4482596) and Das et al (US 5264288).

Mizoguchi teaches that it is well known to provide a casing (sleeve) for transport of a toner mixture on its outer surface in a development device. Figures 1-2 and column 5, lines 5-30 and column 6, lines 25-35. The casing (sleeve) is formed of a base member (51) with a chemically deposited (by electroless plating) layer (52) on the outer surface. Figure 2 and column 6, lines 25-35. The casing (sleeve) substrate can be aluminum and in a cylindrical form (sleeve). Figures 1 and 2 and column 6, lines 45-55. To apply the outer layer the metal casing is chemically pretreated (washed, degreased). Column 7, lines 34-38 and column 9, lines 38-45. Then a conductive layer (zinc alloy) is applied to the casing by a zincate process. Column 9, lines 35-45. Then, the zincate coating is covered by a chemcial deposition where the zincate coating is electrolessly plated with a nickel-phosphorous containing coating. Column 9, lines 35-45. The plating can contain 2-15 wt% phosphorous. Column 9, lines 40-45. Mizoguchi does teach that it is known for a development sleeve to be provided with knurled grooves, which would provide roughness to promote the conveyance of developer (toner). Column 1, lines 25-35 and column 5, lines 10-15.

Mizoguchi teaches all the features of these claims except (1) the specific grooved structure on the outer surface of the casing, (2) the addition of copper to the nickel-phosphorous plating, and (3) the specific chemical plating bath composition and pH value and temperature.

However, Gulla teaches providing electroless plating solutions to plate copper/nickel/phosphorus coatings where the alloy can contain 1-99 percent copper by weight and balance nickel and phosphorous. Column 9, lines 10-20, column 12, lines 10-20. The amount of copper and nickel is dependent on the desired amount of each in the alloy deposit. Column 11, lines 40-50. Gulla teaches that the nickel and copper each have there own benefits (column 3, lines 1-15 and column 4, lines 15-20) and that electroless alloy solutions of the two metals would be desirable. Column 4, lines 30-35. Gulla notes that the deposits can be over aluminum substrates previously subjected to a zincate process. Column 23, lines 25-35. Gulla also teaches that the bath can contain nickel sulfate and copper sulfate as the source of the metal ions. Column 9, lines 20-25. The reducing agent is desirably a hypophosphite, such as sodium hypophosphite. Column 9, lines 45-55 and column 13, lines 15-20. The bath can contain complexing agents such as citric acid. Column 9, lines 35-45. The pH of the bath is desirably between 8 and 11. Column 9, lines 55-60.

Das teaches electroless plating solutions containing metal salts, such as nickel or copper sulfate. Column 1, lines 1-35 and column 4, lines 55-65. The baths can have a sodium hypophosphite reducing agent. Column 5, lines 5-10. The baths can have

complexing/buffering agents such as sodium citrate and ammonium chloride. Column 4, line 65 through column 5, line 6. The temperature of the baths can be 25-95 degrees C. Column 5, lines 10-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mizoguchi (1) provide that the casing has a groove structure at the outer surface of the casing for transporting toner with an expectation of desirable toner transport, because Mizoguchi teaches that it is known to provide casings (sleeves) for transporting toner that have grooves in the surface that would aid in the transport of toner, and while Mizoguchi teaches roughening the surface by grit blasting which also provides roughness for transporting toner, it would have been obvious to one of ordinary skill in the art to provide both the grit blasting and the grooves in the surface to provide multiple beneficial transporting means. (2) It further would have been obvious to modify Mizoguchi to add copper salt to the electroless plating bath to provide a nickel/copper/phosphorous alloy as taught by Gulla in order to achieve the benefits of using copper in the alloy as Mizoguchi teaches to provide an electrolessly plated Ni-P layer and Gulla teaches that when providing an electrolessly plated Ni-P layer it is desirable to provide an addition of copper to the alloy for the benefits of copper, such as allowing plating large and/or irregularly shaped parts (the grooved and roughened surface of Mizoguchi would have irregularly shaped parts). (3) It would further have been obvious to modify Mizoguchi in view of Gulla to provide the combination of nickel sulfate, copper sulfate, sodium hypophosphite, sodium citrate

and ammonium chloride in the plating bath as suggested by Das with an expectation of providing a desirable plating bath, because Mizoguchi in view of Gulla teach providing an electroless coating bath that can contain nickel sulfate, copper sulfate, sodium hypophosphite and complexing agents, and Das teaches that desirable complexing agents for electroless coating baths with materials such as nickel sulfate and sodium hypophosphite in the bath include sodium citrate and ammonium chloride. One of ordinary skill in the art would optimize selection of the materials given from the possible materials to be used based on the coating desired. As to the amount of materials used, it would have been obvious to optimize the amount used to provide the optimum amount of copper and nickel salts for the specific purpose of coating the developer sleeve as Gulla teaches that the amount of copper and nickel is dependent on the desired amount of each in the alloy deposit, that the amount of copper can be 1-99 wt%, with the other materials being optimized from the amount of nickel and copper used, and furthermore, as discussed in MPEP 2144.05 (II), " Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)." As to the pH used, Gulla teaches to use a pH between 8 and 11, which overlaps with the amount claimed, and "In the case where the claimed ranges "overlap or lie inside

ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)." As to the temperature used, Das teaches to use between 25 and 95 degrees C, which overlaps with the amount claimed, and "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

Response to Arguments

14. Applicant's arguments filed July 10, 2009 have been fully considered but they are not persuasive.

Applicant argues that Mizoguchi makes no mention of the use of copper in the nickel-phosphor plating as claimed and the use of the specific plating bath and plating conditions, and that applicant's specification provides specific benefits of the claimed outer layer; and as to the use of Gulla, it has nothing to do with a casing for transport of a toner mixture as claimed, nor does it teach how to choose the combination of recited bath components for a toner transport having the above indicated advantages and features.

The Examiner has reviewed these arguments, however, the rejection is maintained. While Mizoguchi does not mention the use of copper in the plating, the Examiner has cited Gulla as to the benefits of using copper in the nickel-phosphorous plating bath, specifically the permitting of plating of large and/or irregularly shaped

parts, for example, which would apply to the article of Mizoguchi because it would be irregularly shaped, for example, as discussed in the rejection above. The fact that applicant has recognized another advantage (the advantages listed in the specification) which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Gulla is directed to plating nickel-phosphorous coatings (with additional copper for the benefits described) over zincate coatings on aluminum, just a Mizoguchi desires to provide the coating over zincate coatings on aluminum; and therefore is at least reasonably pertinent as it is " one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his or her invention as a whole" (see MPEP 2141.01(a)(I)). Here, given the similarities in the coating methods and the teachings and benefits provided by Gulla, it would have been an obvious known problem when coating with nickel-phosphorous alone to coat irregular shaped articles, with Gulla providing the solution to this problem. As to the precise bath components and conditions for use, the Examiner has noted the teachings of Gulla and Das and the reason to optimize these teachings. Applicant has provided no showing that the exact components and conditions for use claimed are unexpectedly beneficial.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/
Primary Examiner, Art Unit 1792